sant medication for the treatment of adults with MDD who have failed at least two adequate courses of antidepressants. **METHODS:** A three-year Markov microsimulation model with two-month cycles was used to compare the costs and quality-adjusted life years (QALYs) of rTMS and a mix of antidepressants (including selective serotonin reuptake inhibitors, serotonin and norepinephrine reuptake inhibitors, tricyclics, noradrenergic and specific serotonergic antidepressants and monoamine oxidase inhibitors). The model synthesized data sourced from a meta-analysis, published literature, national cost reports and expert opinions. Incremental cost-utility ratios were calculated and uncertainty of the results was assessed using univariate and probabilistic sensitivity analyses. **RESULTS:** Compared with antidepressant medication therapy, rTMS is a dominant/cost-effective alternative for patients with treatment-resistant depressive disorder. The model predicted that QALYs gained with rTMS was higher than for antidepressant medications (1.25 versus 1.18 QALYs) while costs were slightly less (AUD 31,003 versus AUD 31,190). The treatment response rate, using the Hamilton Depression Rating Scale 17, was 16.8% for antidepressant medications and 37.5% for rTMS. In the Australian context at the willingness-to-pay threshold of AUD 50,000 per QALY gain, the probability that rTMS was cost-effective was 73%. Sensitivity analyses confirmed the model stability and superiority of rTMS compared with antidepressant medications. **CONCLUSIONS:** While both antidepressant medications and rTMS are clinically effective treatments for MDD, rTMS is shown to outperform antidepressants in terms of cost-utility for patients who have failed at least two adequate courses of pharmacotherapies. The study shows that rTMS is a cost-effective therapy alterative for patients with treatment-resistant depression without the many side-effects of pharmacotherapy.

PMD47

**FRACTIONAL FLOW RESERVE VERSUS CORONARY ANGIOGRAPHY GUIDED MANAGEMENT IN NON-ST ELEVATION MYOCARDIAL INFARCTION: A HEALTH ECONOMIC ANALYSIS**

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**OBJECTIVES:** Patients with non-ST elevation myocardial infarction are managed based visual assessment of coronary angiography, which can be inaccurate and subjective. A randomized pilot trial has investigated an alternative approach using physiology-guided management with fractional flow reserve that may optimize outcomes. Objective was to estimate the cost-effectiveness of FFR-guided management vs. coronary angiography. **METHODS:** A trial-based economic evaluation was conducted (n=350). We adopted a UK National Health Service perspective. Part I of the analysis used raw, unadjusted costs and QALYs assembled using individual resource use and EQ5D responses from the RCT. Part II used statistical modelling to model the effect pathway of FFR by conditioning total costs and QALYs on the treatment decision (coronary artery bypass graft (CABG), medical therapy and percutaneous coronary intervention (PCI)). Results were then applied to treatment decision distributions following FFR or standard care management. Uncertainty in GLM coefficients, unit cost parameters and sampling were incorporated using bootstrapping and Monte Carlo methods. **RESULTS:** FFR reduced revascularization by PCI or CABG (OR 0.52; 95%CI: 0.28 – 0.94; p=0.022). Part I: FFR led to a mean cost savings (£8,253 vs. £8,603; difference: –£305 [SD=£519]). Likely drivers of cost savings were length of stay (-£331 [£342]) and index year health events (-£217 [£223]). However, low information size contributed to their large imprecision. Incremental QALYs were comparable (0.811 vs. 0.799; diff: 0.013 [0.023]). Part II: FFR led again to a mean cost savings (£8,328 vs. £8,532; difference: –£204 [£305]) and comparable incremental QALYs (0.801 vs. 0.806; diff: –0.005 [0.004]). The probability of cost-effectiveness remained comparable over common willingness-to-pay (70-75%). **CONCLUSIONS:** Early evidence suggests FFR may be cost saving and comparable in QALYs. However, considerable uncertainty persists. We also prescribe specific design considerations for a future trial, including information size suggestions, follow-up frequency and outcomes to aid modelling/lifetime extrapolation.

PMD48

**COST-EFFECTIVENESS ANALYSES OF LUNG CANCER SCREENING STRATEGIES USING LOW DOSE COMPUTED TOMOGRAPHY Â€“ A SYSTEMATIC REVIEW**

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**OBJECTIVES:** Lung cancer is the leading cause of cancer related mortality in North America. This is attributable to it often being diagnosed at an advanced stage. Low dose computed tomography (LDCT) is a tool that can be used to potentially detect lung cancer at an earlier stage thereby improving patient outcomes. Recently, the National Lung Screening Trial (NLST) has shown that this method of screening can produce significant mortality reductions; however, whether such a program is cost-effective has not yet been well-established. **METHODS:** We searched MEDLINE, EMBASE, EBM Reviews - Health Technology Assessment, the National Health Service (NHS) Economic Evaluation Database, and the Cochrane Database of Systematic Reviews. We included studies that presented a cost-effectiveness analysis of LDCT as a method of screening for lung cancer. Studies published prior to 2000 were excluded based on advances in imaging technologies. Costs are presented in 2012 United States dollars. **RESULTS:** Thirteen studies were identified that met the criteria for inclusion. Ten studies were from the United States, and one each from Australia, Israel, and Japan. Most studies evaluated an annual screening program while four studies evaluated one time only screening. Incremental cost-effectiveness ratios (ICERs) were extracted for comparison and varied markedly between $8 186/LYG to $195 758/LYG (life year gained) or for quality-adjusted life years (QALYs): $1 494/QALY to $150 772/QALY. The model results seemed to be sensitive to several parameters including: the prevalence of lung cancer, the cost of LDCT screening, inclusion and characteristics of a smoking cessation program, the stage at which lung cancer was detected, and the lead-time associated with screening. Only one identified study conducted probabilistic sensitivity analysis. **CONCLUSIONS:** The cost-effectiveness of a lung cancer screening program varies widely and seems to largely depend on several key model parameters. Improved risk stratification might enhance the cost-effectiveness of such a program.

PMD49

**COST EFFECTIVENESS OF PRESCRIBING EVZIO FOR LAY HEROIN OVERDOSE REVERSAL**

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**OBJECTIVES:** Evzio is a naloxone autoinjector indicated for lay overdose reversal in emergency treatment of known or suspected opioid overdose. The cost effectiveness of prescribing Evzio for "lay overdose reversal" was compared to "no lay reversal" using a health system perspective over one year. **METHODS:** A decision analysis model was built using outcomes data obtained from randomized clinical trials and publicly available cost data. Adults at risk of heroin overdose in the US were included in the model. The primary outcome was Quality Adjusted Life Year (QALY). All data were subject to sensitivity analyses. **RESULTS:** In the base case analysis, Evzio was found to cost health systems an extra $24,126 for every additional QALY saved due to overdose. Sensitivity analyses of variables found that the model was sensitive to the probability of emergency medical services being called if no Evzio was given, the probability of an overdose being witnessed, and the probability of survival if no medical treatment was given. **CONCLUSIONS:** The cost per QALY saved in prescribing the naloxone autoinjector, Evzio, for patients at risk of opiate overdose is within acceptable cost effectiveness values for new therapies. When administered by friends, family members, and other witnesses of an opioid overdose, Evzio can be cost-effective.

PMD51

**ESTIMATING THE COST-EFFECTIVENESS OF LEFT ATRIAL APPENDAGE CLOSURE COMPARED TO WARFARIN FOR STROKE PREVENTION IN ATRIAL FIBRILLATION**

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**OBJECTIVES:** Atrial fibrillation (AF) is an arrhythmia that increases stroke risk. Left atrial appendage (LAA) occlusion with a LAA closure device is the first non-pharmacologic strategy to undergo randomized, warfarin-controlled trials. It has demonstrated non-inferiority to the current standard, warfarin, for stroke and systemic embolism prevention. The objective of this study was to evaluate the cost-effectiveness of LAA closure relative to chronic warfarin therapy for stroke prevention in AF patients at elevated stroke risk. **METHODS:** A Markov model was constructed from the payer perspective assuming a cohort of AF patients aged 65 with a CHADS2 score≥2 at model entry. Clinical inputs were obtained from published trials. Utilities were obtained from published studies assessing quality-of-life in AF patients. Costs were obtained from published literature. Using quarterly cycles, the model was run over the patients' remaining lifetime summing total costs and total quality-adjusted-life-years (QALYs) for each arm. **RESULTS:** Total QALYs gained for the warfarin and device arms were 11.58 and 11.76, respectively. Total costs for the warfarin and device arms were $84,100 and $89,400, respectively. The base-case ICER for LAA closure compared to warfarin was $29,600/QALY. The model was most sensitive to underlying rates of stroke and intracranial hemorrhage (ICH) and the relative risk of stroke and ICH in the device arm compared to warfarin. It was relatively robust to costs and utilities. Monte Carlo simulation with 10,000 iterations demonstrated LAA closure was cost-effective in 50% and 54% of simulations at thresholds of $50,000/QALY and $100,000/QALY. **CONCLUSIONS:** Though not yet available in the US, trial data suggests LAA closure is an option for anticoagulant-eligible AF patients. It is estimated to be cost-effective at previously acceptable willingness-to-pay thresholds, but uncertainty around the ICER suggests a need for more precise parameter estimates. It remains a novel mechanism to improve outcomes in undertreated AF patients.

PMD52

**SCREENING HIGH-RISK POPULATIONS FOR LATENT TUBERCULOSIS: A SYSTEMATIC REVIEW OF COST-UTILITY ANALYSES**

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**OBJECTIVES:** Efforts to reduce the tuberculosis (TB) burden in many countries have recently focused on screening high-risk groups for latent TB infection (LTBI). Clinicians generally use the tuberculin skin test (TST) or interferon-gamma release assay (IGRA) to aid in LTBI diagnosis. We performed a systematic review of cost-utility analyses in this area. **METHODS:** Five electronic databases were used to identify studies. Study quality was assessed using the Consolidated Health Economic Evaluation Reporting Standards (CHEERS). Population, setting, model type, perspective, costs, screening and treatment parameters, and incremental cost-effectiveness ratios (ICERs) were extracted. All costs were adjusted to 2013 US dollars, with ICERs <$20,000 considered highly cost-effective, ICERs between $20,000 and $100,000 moderately cost-effective, and ICERs >$100,000 not cost-effective. **RESULTS:** Of 415 studies identified, 8 were included in the analysis, with 7 using Markov models and 1 using decision analysis. The decision to screen and how to screen for LTBI was evaluated in 5 studies, while the remaining three only evaluated how to screen. Perspectives used were societal (n=4), healthcare program (n=2), and healthcare system (n=2). Studies evaluating immigrants found adult screening highly cost-effective with a TST (n=1) and moderately cost-effective with an IGRA (n=1). Screening of the foreign-born (n=1) was moderately cost-effective with an IGRA until 44 years of age. Screening for HIV was found to be highly cost-effective with a TST (n=3) and moderately cost-effective with an IGRA (n=1). Screening in those with renal diseases (n=2) and diabetes (n=1) was found to be not cost-effective; screening in other immunocompromised populations was not cost-effective (n=1). **CONCLUSIONS:** Screening of HIV patients with a TST is highly cost-effective and screening of immigrants and foreign-born with an IGRA is moderately cost-